Shane Sookhan

Scientist | Software Developer | Educator

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SUMMARY

I am a scientist, software developer, and educator creating innovative solutions to solve complex environmental issues. I believe that my experience in research (exploring cutting-edge, AI-based technologies for working with very large geophysical and remote sensing datasets), education (creating unique geospatial-based experiential learning opportunities) and software development (developing interactive learning material and powerful geospatial analytical research tools) has prepared me to positively influence society and I am now looking for the right opportunity to do so.

EDUCATION

Doctor of Philosophy in Environmental Science
University of Toronto
2015 - 2022

Master of Environmental Science
University of Toronto
2014 - 2015

Honours Bachelor of Science, Environmental Geoscience Specialist
University of Toronto
2009 – 2014

SKILLS

Geospatial Software and Libraries:

- ArcMap (Spatial Analyst, 3D Analyst, Spatial Statistics, etc.)
- ArcGIS Pro
- ArcGIS Online (Web App Builder, Operations Dashboard, Story Maps)
- Open-Sourced GIS software (QGIS, GDAL, MapServer)

SELECTED WORK EXPERIENCE

Senior Geospatial Developer
Confluvio Consulting Inc / 2024-Present

- Contribution to design and creation of interactive web maps developed using VueJS, JavaScript, MapBox GL JS, and other libraries
- ArcGIS PRO tool development and documentation writing, including processing global datasets using developed tools
- Preparation of GIS training materials and delivery of GIS training sessions to customers as needed

Postdoctoral Researcher
University of Toronto Scarborough / 2023-2024

- Research project investigating the spatial relationship between climate and socio-economic data in Toronto, Canada

Geospatial Data Analyst Consultant
Altitude Intellect / 2022-Present

Sole proprietor of geospatial data analysis consulting company

- Responsible for responding to request for proposals and generating funding for project development

Sessional Instructor
University of Toronto Scarborough / 2023-2024

- Department of Human Geography, Fundamentals of GIS I

- Python Libraries (TileCache, Xarray, Geopandas, Rasterio, rioxarray, Dask, Cartopy)
- UAV and Remote Sensing Data Processing (Agisoft Metashape, WebODM)
- Relational Database Software (SQL, PostGIS, PostgreSQL)

Programming and scripting:

- Python (Including NumPy, Pandas, PyTorch, TensorFlow, Keras, Django)
- HTML and CSS
- JavaScript (Leaflet, TileMill, Cesium StoryMapJS, PanolensJS, jQuery, Node.js, Chart.js, Vue.js, React, MapBox GL JS)
- Google Firebase, Microsoft Azure, and Amazon AWS

Design software:

- Adobe Photoshop, Illustrator and Captivate
- Open-Source (GIMP, InkScape, Blender)
- Autodesk 3ds Max

- Clear, purposeful writing style demonstrated in 16 peer-reviewed research papers
- Strong public speaking skills exhibited in 19 conference presentations and invited talks

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SELECTED AWARDS

University of Toronto Graduate Student Research Award
University of Toronto / 2021

University of Toronto Graduate Teaching Assistant Award
University of Toronto / 2021

Ontario Graduate Scholarship
Government of Ontario / 2016-2018

Web Developer
Public Risk Management (PRISM) Institute / 2021-2022

Lead developer on ComeAI, a web app which allows user manipulation of Bayesian model parameters to provide information on socio-economic risk factors influenced by environmental data to stakeholders

- Responsible for HTML, CSS and JavaScript development
- Includes the geocoding of web-scraped open-source socio-economic data (World Bank, etc.) for use in Leaflet map-UI element for selection of model parameters

Quaternary Geologist and Data Modeller
Natural Resources Canada / 2021-2022

Developed geospatial analysis methods for mapping and differentiating glacial activity regimes from remote sensed data

- Acquired and assembled LiDAR-based Digital Elevation Model data for study area in south Baffin Island
- Geospatial analysis completed using Python scripts with mapping done in ArcMap and ArcGIS Pro

Scientific Researcher
Department of Physical and Environmental Science, University of Toronto / 2015-2022

Developed GIS-based techniques to improve the mapping of formerly glaciated landscapes from remote sensing data to predict effects of global climate change

- Pre-existing remote sensing datasets supplemented using UAV remote sensing (LiDAR and photogrammetry)
- Data analysis skills and software used include Python (Scikit-learn, TensorFlow, arcpy), R (ggplot, caret package), machine learning (neural network analysis, unsupervised image segmentation), classification (fuzzy logic, decision tree), ArcGIS (spatial statistics)

Web Developer
Department of Physical and Environmental Sciences, University of Toronto / 2012-2022

Lead developer for Let's Rock Ontario Android App and website. Instructional Design lead for Planet Earth Online, a government funded undergraduate geology online course and Virtual Petrography, an online tool for teaching microscopy

- Learning objects coded using Javascript, Python, CSS, JQuery and HTML. All learning objects developed to meet Web Content Accessibility Guidelines (WCAG)
- Geospatial web development packages used include Leaflet, TileMill, PanolensJS, and ArcGIS StoryMaps
- Design and Course Development software used includes Adobe Photoshop, Illustrator, and Captivate, and Blender